UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: ***June 16, 2021***

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Quad Cities Landfill Phase IV, Milan, Illinois

FROM: Emma Leeds, Environmental Engineer
AECAB (IL/IN)

THRU: Linda Rosen, Acting Section Chief
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Quad Cities Landfill Phase IV

Facility Location: 13606 Knoxville Road, Milan, Illinois 61264

Date of Inspection: Virtual Opening Conference – May 4, 2021
On-site Inspection - May 11, 2021
Closing Conference - May 11, 2021

EPA Inspector(s):

1. Emma Leeds, Environmental Engineer
2. Dakota Prentice, Environmental Engineer
3. Daniel Heins, Environmental Scientist
4. Brianna Fenzl, Environmental Engineer
5. Avery Bowers, Environmental Engineer
6. Debra Klassman, Branch Chief, Multi-Media Branch I, Office of Regional Counsel
   Note: Debra Klassman was only present for the virtual opening conference.

Other Attendees:

1. Dominic Remmes – Regional Engineer, Waste Connections
2. Rob Bauman – Landfill Manager, Waste Connections
3. Ryan Daniels – Environmental Specialist, Waste Connections
4. John Perkey – Associate General Counsel, Waste Connections
5. Julie Mader – Office Manager, Waste Connections

6. Josh Hale – Assistant District Manager, Waste Connections
7. Bryan Weldon – Civil Engineer and Surface Emission Monitoring (SEM) Technician, Golder Associates

Contact Email Address: Dominic.Remmes@WasteConnections.com

Purpose of Inspection: To determine compliance with the Clean Air Act and perform comparative SEM

Facility Type: Municipal solid waste landfill

Regulations Central to Inspection: 40 C.F.R. Part 60, Subpart WWW; 40 CFR 63, Subpart AAAA

Arrival Time for On-site Inspection: 1:45 PM
Departure Time for On-site Inspection: 5:30 PM

Inspection Type:
☐ Unannounced Inspection
☒ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☐ Provided Small Business Resource Information Sheet
☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
☒ Provided CBI warning to facility

The following information was obtained verbally from Waste Connections unless otherwise noted.

Process Description:
The Quad Cities Phase IV Landfill (the Landfill) is owned and operated by Millennium Waste, a subsidiary of Waste Connections. The Landfill has approximately 10 full-time employees. Phases I – III are located to the west of Mill Creek and have been in post-closure care since 1988, reportedly under the control of Allied Waste.

The Phase IV Landfill was originally permitted for 63 acres in 1995 but received a permit to expand north by an additional 66 acres in 2008. Waste has been placed on the entire originally permitted 63 acres and is still being placed on top of this area; none of the landfill is fully up to grade or in final closure. Cell A, the western half of cell B, and cell 3 of the original landfill are currently active. Waste was first placed on the expansion area in 2020, and the closure estimate for the full Quad Cities Phase IV Landfill is currently 2058. The Landfill was accepting around 800 tons of waste per day until 2003, when they increased to around 1,500 tons per day.

Approximately half of the waste accepted is municipal solid waste, and the other half is construction and demolition waste.

The western two-thirds of the Landfill are lined with 5 feet of glacial till clay that was extracted from the property, while the eastern third is lined with both clay and high-density polyethylene membrane. Approximately 8 acres of the landfill are currently under daily cover, which is generally composed of 6 inches of soil and sometimes an alternative cover. When waste is no longer being placed in an area, 1 – 3 feet of soil and intermittent seeding are placed as the intermediate cover.

The Gas Collection and Control System (GCCS) includes approximately 30 active wells (7 horizontal) and a 2,200 standard cubic feet per minute (scfm) flare with two blowers. The original blower only accommodated 50% of the flow capacity of the flare, but the current configuration is fully equipped for the design capacity. There is no generator for the flare; in the case of a power outage, the gas valves automatically shut to prevent landfill gas from venting to the atmosphere.

The Landfill accepts asbestos and requires a certification and a notice of one day from the seller before the asbestos is delivered so they can set up a separate dumping area. They log the location of the asbestos after it is placed. The Landfill does not accept refrigerants.

All leachate produced at the Landfill flows through a leachate collection system to a 127,000-gallon leachate storage tank. The leachate is permitted to be treated by two different publicly owned treatment work facilities, and it is removed via tanker truck 1 to 2 times per week. Approximately 3.5 to 4 million gallons of leachate are generated at the landfill per year. There is no condensate removal program, and no leachate treatment on-site.

Staff Interview: Waste Connections will occasionally check the water level within their wells. They checked the well water levels in March 2021 and found that some wells were over 50% full of water.

The flare typically runs at 1,200 scfm – 1,400 scfm, which is 50% of the full capacity. The flare has not been stack-tested, but a Method 22 opacity test is performed annually. The landfill gas flow and temperature of the flare are measured and recorded every 30 seconds.

Waste Connections updates the GCCS at the Landfill annually. Sometimes wells will be crushed under the weight of additional waste and will collapse, and new wells are added to replace them. Six wells were added in the fall of 2020 and no wells are planned to be added in 2021. Dual extraction wells for leachate and gas will be added to the GCCS within the next year. Waste Connections is also starting to develop a plan for entering the renewable energy market.

Mr. Remmes claimed that there had been one issue with an air violation over the previous 12 years, due to an increase in fugitive emissions from trucks on unpaved roads. The use of more trucks was due to an increase in business at the Landfill. Mr. Remmes also reported that there have not been any issues with higher operating values for wellhead parameters, and that around 90% of any pressure problems are due to the local power grid going down, incurred from heavy

storms. The power will allegedly go out about once a quarter, and the flare is never down for more than a day.

There are many boundary gas probes around the property. High levels of methane gas were detected at Gas Monitoring Probe 27 (GMP27) in 2019, possibly due to a leak between the original landfill and the expansion. A soil vapor extraction well was installed and connected to the GCCS, and GMP27 has reportedly not detected high methane levels since.

Rob Bauman routinely drives around the surrounding neighborhood to monitor for odors.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
Two EPA inspectors performed Method 21 surface emission monitoring for methane at the Landfill for about 2.5 hours, with three additional EPA inspectors assisting with notes and equipment. Methane values higher than 500 parts per million (ppm) were observed at approximately half of the gas wells. Detections exceeding 500 ppm were also observed at other spots throughout the landfill, including at erosion channels on the north slope. Technicians from Golder Associates had been out on the Landfill earlier in the day and found approximately five methane hits. Wells on the southern and eastern end of the Landfill had dry bentonite placed around the penetrations.

According to Mr. Remmes, the erosion on the north slope was not yet repaired due to inclement winter weather. Seeding for intermediate cover on the north slope did not seem to have been placed, and multiple elevated methane detections were identified in this area.

Leachate breakout spots were observed on the southern slope and leachate stains from previous leaks were observed on the west slope. Leachate sump L001, at the bottom of the west slope, had an audible gas leak at the seal, seemingly caused by a damaged cap.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

RECORDS REVIEW

The following records were provided to EPA inspectors by Julie Mader via a shared online folder. EPA inspectors reviewed the records prior to the virtual opening conference and on-site inspection.

- 2020 Illinois Clean Air Act Permit Program Permit
- Monthly cover integrity reports for 2020, 2021
- Quarterly SEM reports written by Golder Associates for 2020, 2021

- Method 22 visible emission monitoring of the flare by Golder Associates for 2020, 2021
- Control device parameter monitoring records for the flare for 2020, 2021
- Monthly wellhead monitoring records for 2020, 2021
- Semi-Annual Reports for 2020, 2021

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:
The following documents were requested from the Landfill via email on May 21st, following the off-site inspection.

- Quarterly SEM reports for 2016, 2017, and 2018
- Cover integrity reports for 2016, 2017, and 2018
- Inspection maintenance and repair log for the landfill and control equipment for 2016 – 2021
- Any additional cover integrity and cover remediation records maintained by Waste Connections for 2016 – 2021

Compliance Assistance: Proper Method 21 and surface emission monitoring approaches were discussed, specifically regarding the amount of time spent taking a methane reading in one location. EPA inspectors confirmed that there is no time limit for standing in one location when detecting elevated levels of methane.

Concerns: EPA inspectors noted the systematic well leaks, the erosion and cover integrity issues throughout the landfill but specifically on the north slope, and the leachate breakout spots on the south slope.

SIGNATURES

X Emma Leeds Digitally signed by Emma Leeds Date: 2021.06.16 09:24:00 -05'00'

Emma Leeds
Report Author

X Rosen, Linda Digitally signed by Rosen, Linda Date: 2021.06.16 11:46:25 -05'00'

Linda Rosen
Acting Section Chief

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log
2. Appendix B: Field Measurement Data

Facility Name: Quad Cities Landfill Phase IV
Facility Location: 13606 Knoxville Road, Milan, Illinois 61264
Date of Inspection: May 11, 2021

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name:	2. Archival Record Location:
Emma Leeds	https://usepa.sharepoint.com/:f:/r/sites/R5_Work/r5erc/ecad/AECAB%20Library/Enf_QuadCities_IL_21/Enf_QuadCities_IL_21_Inspection/Appendix%20A%20-%20Digital%20Image%20Log?csf=1&web=1&e=v1L0Za

Image Number	File Name	Date and Time (incl. Time zone and DST)	Latitude and Longitude	Description of Image
1	IMG_1111	5/11/2021, 2:55 PM CST		Flare control screen
2	IMG_1112	5/11/2021, 2:56 PM CST		Flare
3	IMG_1113	5/11/2021, 3:04 PM CST		Gas well EW013 with recently placed bentonite
4	IMG_1114	5/11/2021, 4:27 PM CST		Erosion on north slope
5	IMG_1115	5/11/2021, 4:29 PM CST		Stains from leachate leak on west slope
6	IMG_1116	5/11/2021, 5:03 PM CST		Leachate leak on west slope
7	IMG_1117	5/11/2021, 5:11 PM CST		Leachate sump L001

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APPENDIX B: FIELD MEASUREMENT DATA

Calibration with 500 ppm methane gas, taken at 2:15 PM (EST)

	TVA #A56584		TVA #A56575	
	Methane Reading (ppm)	Response Time (s)	Methane Reading (ppm)	Response Time (s)
# 1	515	6.36	492	4.14
# 2	517	5.93	502	5.12
# 3	533	5.20	507	5.18

Note: 500 ppm methane calibration gas was provided to EPA inspectors by Golder Associates

Exceedance measurements from U.S. EPA SEM

		ppm (or %) VOC as methane	
Exceedance	Location	TVA #A56584	TVA #A56575
1	41.381741, -90.522007	1212	960
2	EW-12	2900	2400
3	41.38184, -90.52132	910	765
4	EW-202	1400	2302
5	EW-20R	1583	720
6	EW-25	3%	1412
7	EW-201	1.2%	740
8	41.38242, -90.519	1734	1080
9	EW-29	3%	2.2%
10	EW-213	1.3%	2.5%
11	EW-212	2%	2012
12	41.382783, -90.517333	2500	2900
13	41.38306, -90.51585	1308	837
14	41.3833, -90.51685	2200	4000
15	41.38327, -90.51698	5300	3300
16	41.38328, -90.51717	1273	1088
17	41.38316, -90.51806	2000	1659
18	EW-24R	4300	820
19	EW-4	1.3%	3%
20	L0001	1940	1330

Bump check with 500 ppm methane calibration gas– 5:30 PM

	Methane Reading (ppm)	Response Time (s)
#A56584	620	2.4
#A56575	467	2.4